

June 12, 2003

NPN Transfer to NWSTG
File naming and WMO header format – Revision 6

Messages will be for a single station, for a single instrument type, for each product and averaging period, except that surface and GPS/IPW measurements from stations will be conglomerated into a single message for that period.

As of September 12, 2001, data from the NOAA profiler network as well as wind profiler data collected from Profilers operated by Cooperating Agencies (CAP), will be available via NOAAPort. The message headers are as described below.

For CAP profilers, where the wind profiler may operate in distinctly different sampling frequencies, the moments message (IUPT42) may contain 1-n datasets, where each dataset is for a different sampling frequency

Each file in the target FTP directory will be named according to this convention and will contain 1 WMO bulletin, described later:

yyyyjjjhhmm_rrrr_sssss.dddd

Where yyyy is year;

jjj is julian day

hh = hour

mm = minute

rrrr = data resolution in seconds (typically -360 or -3600, where the negative sign indicates the data time stamp is at the end of the sampling period)

sssss = station identifier (up to 5 chars but may be less)

and dddd is a datatype mnemonic:

mom for Moments (IUPT42)

wind for Winds (IUPT43 and IUPT46)

rass for RASS (IUPT41)

surf for Surface Obs (ISAT40)

GPS for GPS IPW (ISXT40)

WMO bulletin is as follows, excerpted from Manual on the Global Telecommunications System #386–

<cr> <cr> <lf> T₁T₂A₁A₂ii<sp>CCCC<sp>YYGGgg<cr><cr><lf><BUFR-
text><cr><cr><lf><etx>

Proposed T₁T₂A₁A₂ definitions:

- | | | |
|----|---------------------------|--|
| a. | Non-hourly Surface data : | ISXT - I = Observational data in BUFR
S = Surface/Sea Level
X = Other data
T = 45-180 W Northern Hemi |
| b. | Hourly surface data: | ISAT - I = Observational data in BUFR |

S = Surface/Sea Level
A = Hourly data
T = 45-180 W Northern Hemi

- c. Non-hourly upper-air data: IUCT - I = Observational data in BUFR
U = Upper air
X = Other data
T = 45-180 W Northern Hemi
- d. Hourly upper-air data: IUPT - I = Observational data in BUFR
U = Upper air
P = Land-based hourly specials
T = 45-180 W Northern Hemi

-ii- is a bulletin differentiation code, probably 40-49
CCCC is originating station from WMO Publication #9, Vol C, Chapter 1.
Eventually CCCC will be the code for the local WFO, as they may build composite messages from several nearby profilers.
YYGGgg is International date-time group.

As of May 28, 2002, these specific message headers are in use and apply to single-station observations for a single sampling or averaging period:

ISAT40 KBOU = All Surface Meteorology observations
IUPT41 KBOU = All RASS (Radio Acoustic Sounding System) profiles
IUPT42 KBOU = All Profiler Moment profiles (typically signal strength, radial velocities, velocity variance or spectral width, and/or signal-to-noise ratio, for each combination of radar operating beam and mode)
IUPT43 KBOU = All Wind Data profiles at any frequency.
IUPT46 KBOU = Cooperating Agency Profiler Wind Data (NOTE: This message no longer produced as of June 4, 2003)
ISXT40 KBOU = GPS Integrated Precipitable Water Vapor and associated info

Notes:

- 1) Surface data bulletins will contain multiple instrument data, such as anemometer, barometer and rain gauge and GPS Integrated precipitable water vapor.
- 2) Upper air data includes existing wind profiler and RASS soundings - however, each instrument package shall produce it's own bulletin, thus anywhere between 0 and n upper-air bulletins may be produced from a single station. The moment data will be encoded as a separate bulletin.
- 3) It now appears we will have some data originating from the southern hemisphere as we are entering a joint project with the Aeronomy Lab to acquire and distribute their data. This will entail messages where the 4th character will also be from Table C3 from the Manual on the GTS, A.II-5/10.
- 4) BUFR message sub-type field is used as a data source indicator. Message sub-type zero (0) indicates data from a NOAA profiler network station; sub-type one (1) indicates data from a Cooperating Agency Profiler (CAP) station.

Typical station configuration in the NOAA profiler network is a Lockheed-Martin 404 or 449 Wind Profiler, GPS receiver and surface observation package. Optional instrumentation includes LM RASS sounder, PSOS or GSOS surface condition measuring packages, GPS IPW instrument, up to 2 anemometers, one thermometer, one humidity sensor, one rain gauge, one barometer. Thus the typical product set for the station for a given sampling interval would be: IUPT41 (RASS Virtual Temperature profile), IUPT42 (Moments profiles), IUPT43 (Wind Profiles), IUCT40 (GPS IPW calculated values), ISAT40 (Surface bulletin).

